Population Impacts of the Norman Wells Project on the Four Study Communities 1982 - 1984

Report 2-85

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Les Terrasses de la Chaudiere
Ottawa. K1A 0H4

David A. Stewart
Department of Geography
University of Saskatchewan
Saskatoon, S7N 0W0
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PREFACE

In 1982, the Department of Indian Affairs and Northern Development began its socio-economic impact monitoring program in connection with the Norman Wells Oilfield Expansion and Pipeline Project. This program, carried out under the direction of Professor R.M. Bone of the University of Saskatchewan, is, we believe, the first of its kind. Focussing on four Mackenzie Valley communities in the vicinity of the Norman Wells Project, this study was specially designed to allow monitoring of selected social and economic impacts through field surveys done before, during and after construction. The objective of the first field program, carried out in 1982, was acquisition of the baseline data, while the 1983 and 1984 field surveys captured the situation during the active construction phase. The 1985 fieldwork, done for the first time in all four of the survey communities by native organizations, provided the picture for the immediate post-construction period.

Various aspects of the 1982-84 portion of the project were analysed in the 1984 series of reports. This series discusses certain perspectives from the 1985 work, and, as well, deals with changes in selected factors between 1982 and 1985. In a subsequent, and final, series subjects dealt with will include the overall impacts of the Norman Wells Project and a discussion of the monitoring of socio-economic impacts in Canada.

R.D. Glass
Director General
Constitutional Development and
Strategic Planning Branch

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BACKGROUND TO THE NORMAN WELLS SOCIO-ECONOMIC IMPACT MONITORING PROGRAM

In mid-1979, Esso Resources Canada Ltd. and Interprovincial Pipeline Ltd. initiated discussions with the federal government concerning a major resource development project in the Mackenzie Valley in the Northwest Territories. This project, the Norman Wells Oilfield Expansion and Pipeline Project, was designed to increase production of oil at Norman Wells and carry this increased production through a small diameter pipeline from Norman Wells to Zama, Alberta to connect with the national oil pipeline system. The proposed project was brought to the attention of people in the Mackenzie Valley communities through community information meetings arranged by the companies and designed to inform local residents and businessmen of the potential job and contract opportunities associated with project construction.

During 1980, public hearings were held in northern communities by both the Federal Environmental Assessment and Review Office and by the National Energy Board. These public hearings provided a forum for individuals, native organizations, village councils, government agencies, companies and special interest groups to present their views on the proposed project and the implications of such development for the North and native peoples. The question of involvement of northern residents and businesses in the Norman Wells Project was of major concern during the public hearings, and both the federal and territorial governments indicated that the degree of northern participation in the project would be a key factor in their consideration of whether to approve or reject the Norman Wells Project. On July 30, 1981, the federal government announced its approval, subject to a two-year delay in the commencement of construction to allow government, the companies and northerners time to prepare for their participation in this project.

In early 1982, the Department of Indian Affairs and Northern Development recognized the need to monitor the impacts of the project on the four communities located along the pipeline route. These communities, Norman Wells, Fort Norman, Wrigley and Fort Simpson, were regarded as the ones most likely to receive the bulk of the socio-economic impacts caused by the construction of the Norman Wells Project. All of the socio-economic impacts had potentially positive and negative effects on the communities and local people, and the monitoring program was intended to capture these and evaluate them against the background of pre-construction baseline data on selected indicators.

Carried out by the Department of Geography of the University of Saskatchewan under the direction of Dr. Robert M. Bone, the monitoring program consisted of gathering data from local residents on their household and business characteristics over the course of the construction phase. The framework for this work consisted of three parts: (1) pre-construction phase; (2) construction phase; and (3) a post-construction phase. The field work and data preparation took place from 1982 to 1986. A series of reports based on the data may be obtained from the Department of Indian Affairs and Northern Development.

1. INTRODUCTION

In 1982, construction began on the Norman Wells Oilfield Expansion and Pipeline Project. Prior to the approval of this mega project by the federal government, the Federal Environmental Assessment Review Office (FEARO) examined the development plans of Esso Resources Ltd. and Interprovincial Pipeline (NW) Ltd.. Two major potential population impacts were identified. These were expressed as:

1. "The Panel is concerned about a significant increase in population during and after construction and the resulting effects on community infrastructure and population." (FEARO 1981, p.60)

2. "The effects on the native society of a temporary and long-term increase in the number of white residents." (FEARO 1981, p.59)

The objectives of this report are: (1) to identify the population characteristics of the four study communities prior to the Norman Wells Project and (2) to examine the impact of the construction phase on these characteristics.

The report has four major sections. The first section is an examination of recent changes in population size in the impact zone (Norman Wells, Fort Norman, Wrigley and Fort Simpson). The second section consists of an analysis of the population composition of each community. Topics include ethnicity, age, sex and education. The third section analyzes northern residency and migration. It also identifies the number and characteristics

of "new" residents in each community. The final section of the report discusses the potential labour force. Examination of the activities of those between the ages of 15 and 64 years yields valuable insights into the economic well-being of a community.

2. POPULATION SIZE OF THE COMMUNITIES

Large increases in the populations of the impacted communities was a major concern of FEARO. Figure 1 shows the changes to population in the four communities over the past 25 years. Fort Simpson and Norman Wells, the two larger communities, have had more growth over this 25 year period than the smaller communities of Fort Norman and Wrigley.

Norman Wells experienced a steady rate of growth from 1956 to 1981 with an annual rate of increase of 5.2%. During the construction phase of the Norman Wells Project a much more rapid increase in population occurred. The population of Norman Wells jumped from 420 in 1981 to 630 in 1984, representing an average annual rate of growth of nearly 17%. Such a rapid increase in the population of Norman Wells is one of the major effects of the Norman Wells Project. Most of this increase was caused by a large in-migration which is analyzed by ethnicity, sex and economic activity later in this report.

Fort Simpson's population also grew steadily over the past 25 years, averaging 3.9% from 1956 to 1981. Within these 25

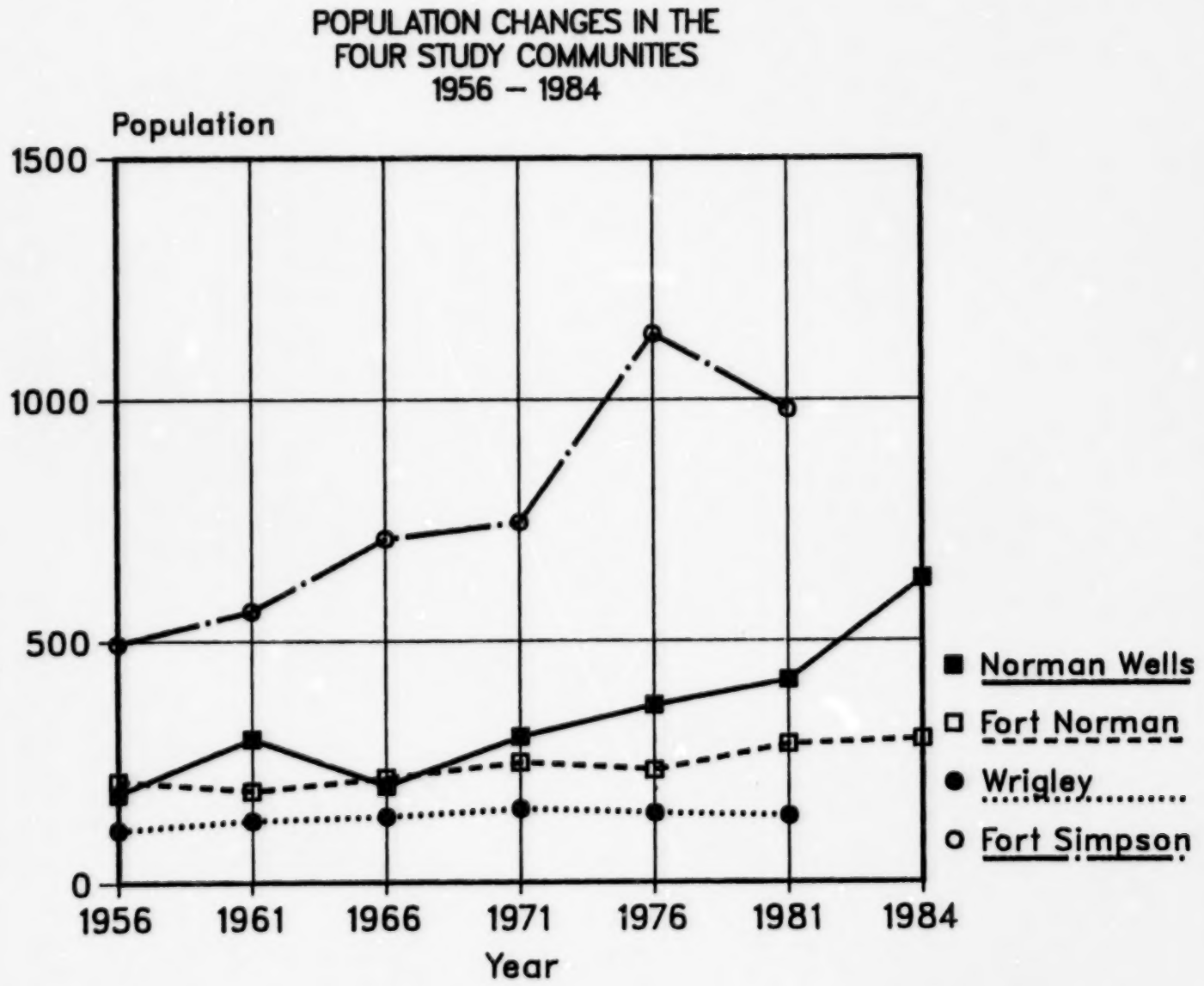

POPULATION CHANGES IN THE
FOUR STUDY COMMUNITIES
1956 – 1984
Population
1500
1000
500
0
1956
1961
1966
1971
1976
1981
1984
Year
Norman Wells
Fort Norman
Wrigley
Fort Simpson

Figure 1

years there was a period of very rapid increase (from 1971 to 1976) and a period of decline (1976 to 1981). Both of these periods were caused by the proposed Mackenzie Valley Pipeline Project. During the early 1970's, the population of Fort Simpson grew rapidly due largely to the arrival of southerners while during the later period it declined largely due to the exodus of these same people.

The population size of Fort Norman and Wrigley has grown very slowly over the past 25 years. The population of Fort Norman has risen from 209 residents in 1956 to 296 in 1984. This growth represents an average annual increase of 1.5%. Wrigley's population has risen from 109 in 1956 to 137 in 1981, with an average annual growth rate of 1.0%.

In terms of population size of the four communities, the following observations can be made about the impact of the Norman Wells Project:

1. Norman Wells has grown rapidly during the construction phase increasing from 420 residents in 1981 to 630 in 1984. However, the impact could have been much greater if the work camps and a rotational work force system had not been used. As many as 1200 project employees could be housed in these camps.

2. Fort Norman's population increased slightly from 286 in 1982 to 296 in 1984. This small increase was the combined result of natural growth, a small in-migration and a larger out-migration.

3. The impact of the construction phase on the populations of Fort Simpson and Wrigley is not available since the DIAND survey did not take place in

these communities in 1984.

3. POPULATION COMPOSITION OF THE FOUR COMMUNITIES

Population composition is analyzed in terms of ethnicity, age, sex and education. The approach is to establish pre-project population characteristics and then to determine how the Norman Wells Project affected these characteristics in the four communities.

3.1 Ethnicity

The ethnic composition of the four communities varies widely (Figure 2). Norman Wells is a 'non-native' community with 83% of its residents classified as non-native whereas Fort Norman and Wrigley are 'native' communities with 95% and 99% native, respectively. Fort Simpson lies in the middle of these two extremes with 68% native residents. A detailed statistical presentation by descent (Status Indian, Non-Status Indian, Metis, Inuit and Non-Native) in the four communities for 1982 and the corresponding data for 1984 is found in Table 1 and Table 2.

Between 1982 and 1984, a small increase (5%) in the non-native population occurred in Norman Wells. On the other hand, there was a decline (11%) in the proportion of natives from 1982 to 1984 in Fort Norman. This decline is attributed to changes in Status Indian numbers and to an in-migration of

Table 1 Descent of the Population in the Study Communities in 1982

	Norman Wells	Fort Norman	Wrigley	Fort Simpson
Native				
Status Indian	4.8%	72.7%	97.1%	48.5%
Non-Status Indian	0.5%	2.5%	0.0%	3.9%
Metis	10.6%	19.4%	0.0%	14.7%
Inuit	1.1%	0.0%	1.9%	0.6%
Total	17.0%	94.6%	99.0%	67.7%
Non-Native	83.0%	5.4%	1.0%	32.3%
Total	100.0%	100.0%	100.0%	100.0%

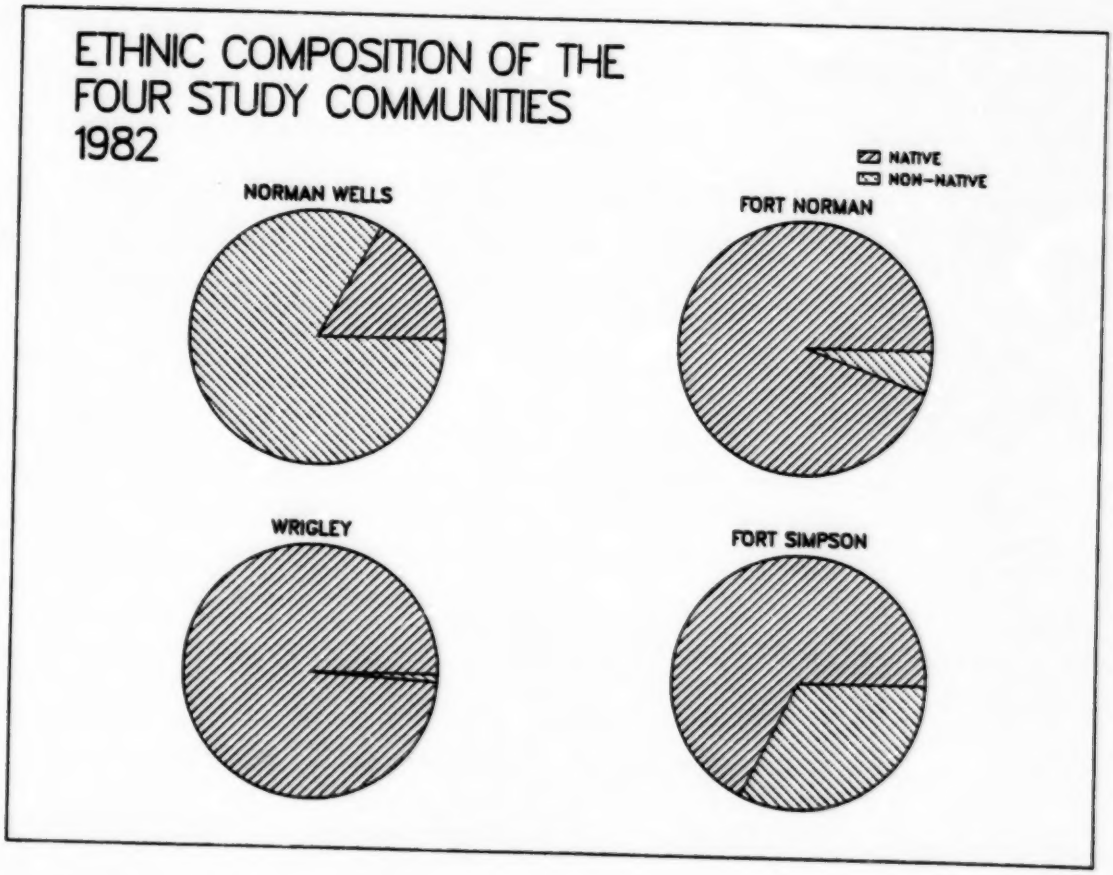
Table 2 Descent of the Population in the Study Communities in 1984

	Norman Wells	% change from 1982	Fort Norman	% change from 1982
Native				
Status Indian	2.9%	-1.9%	57.6%	-15.1%
Non-Status Indian	0.0%	-0.5%	3.6%	+1.1%
Metis	7.6%	-3.0%	22.3%	+2.9%
Inuit	1.6%	+0.5%	0.0%	0.0%
Total	12.1%	-4.9%	83.5%	-11.1%
Non-Native	87.9%	+4.9%	16.5%	+11.1%
Total	100.0%	-	100.0%	-

non-natives.

In 1981, native people formed 58% of the 45,540 people residing in the Northwest Territories (Statistics Canada, Native Summary Tape, 1981). They also formed the vast majority of the residents in 56 of 66 urban places. In contrast, non-natives formed at least half the population in only ten communities, most of which are either administrative centers or mining towns.

Figure 2



This pattern of geographic concentration of non-native

people is also apparent in the study area. Native people form 68% of the population in the study area and are the majority in three of the four study communities. The non-native population is concentrated in Norman Wells, a mining town, with most of the remaining non-natives in the area residing in Fort Simpson, the administrative center for the lower Mackenzie Valley.

3.2 Age Composition

The age structure of a community's population is an important indicator of many population characteristics. In this section, population pyramids are presented for each community. A population pyramid graphically displays a population's age and sex composition and its shape can give significant clues as to the past events and future trends of that population (Haupt 1978, p.13). An added bonus is that due to the availability of both the 1982 and 1984 pyramids for Norman Wells and Fort Norman the impact of migration associated with the period of the mega project is revealed.

Norman Wells

The population pyramids for Norman Wells are presented in Figure 3. A large number of the residents at Norman Wells are in the 25 to 40 age bracket, reflecting the large work force in this community. Interestingly, in 1982 no one over the age of 65 was

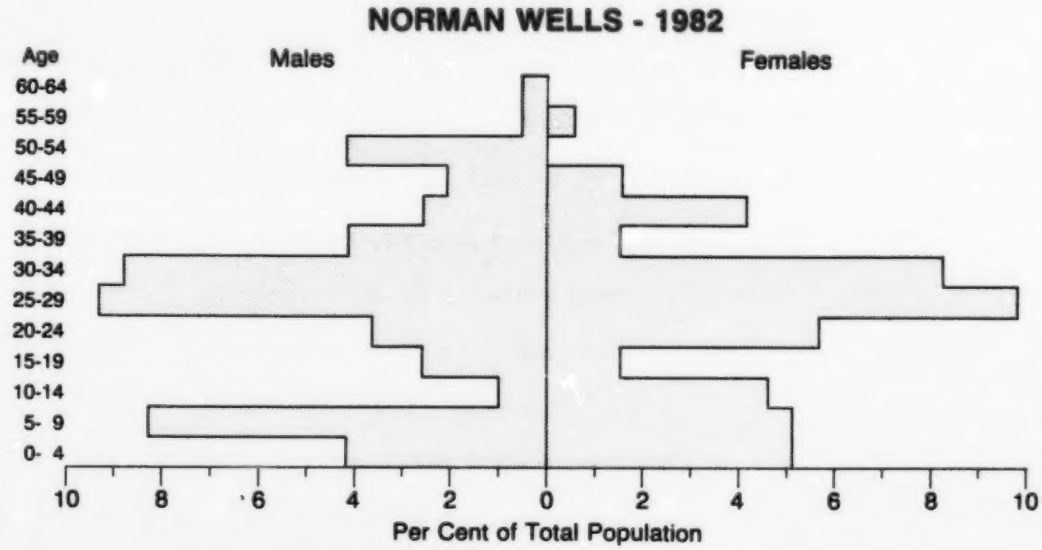
recorded by the DIAND survey in Norman Wells, indicating the lack of permanency in this community.

Although the Norman Wells pyramid retained its shape from 1982 to 1984, there are some important differences. For example, in 1982 those under the age of 15 comprised 28.5% of the population whereas by 1984 this had risen to 34.8%. This change is explained by assuming that by 1984 many project workers residing in Norman Wells had moved their families into the community.

Another striking feature of the 1984 pyramid for Norman Wells is that there are very few persons who are in the 15 to 19 age category. This would likely be the result of two factors: (1) since there is no high school in Norman Wells, students attending high school must live outside of the community, and (2) since a large portion of the adult population are young adults between the ages of 25 to 40, they are unlikely to have children aged 15 to 19.

Fort Norman

The Fort Norman pyramids clearly show that changes have occurred from 1982 to 1984 in this community (Figure 4). The proportion of residents in the 15 to 19 age cohort dropped from 9.9% in 1982 to 4.5% in 1984. The females provided the major


NORMAN WELLS - 1982
Age
Males
Females
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5- 9
0- 4
10
8
6
4
2
0
2
4
6
8
10
Per Cent of Total Population

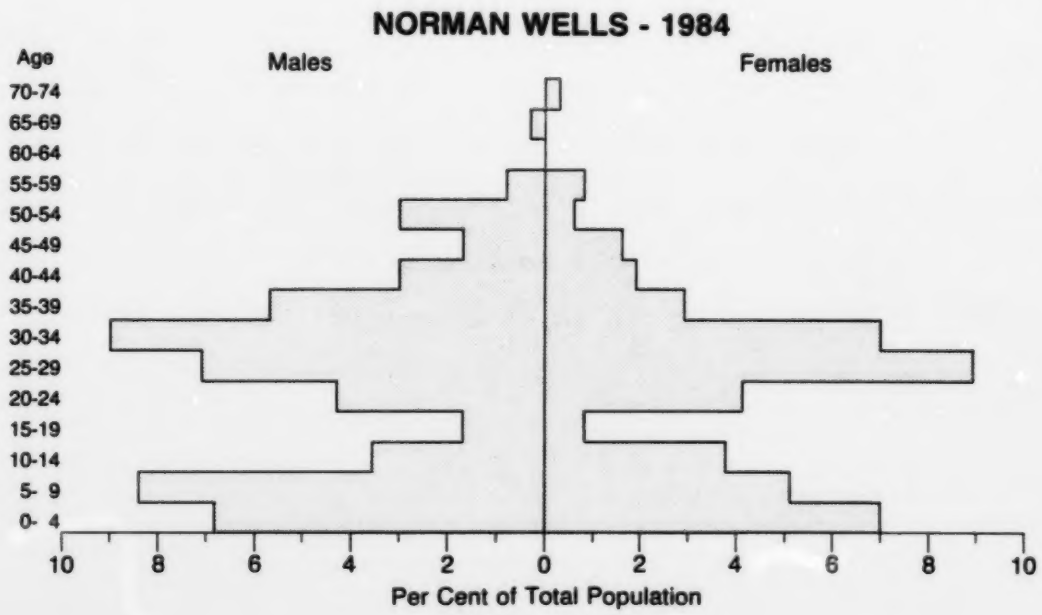
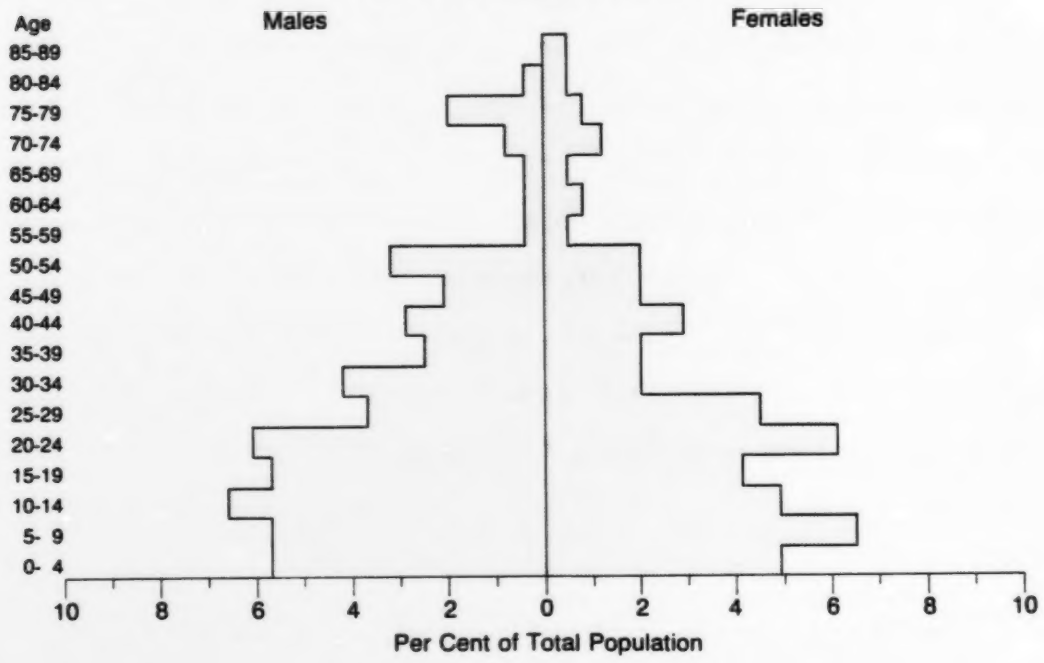

NORMAN WELLS - 1984
Age
Males
Females
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5- 9
0- 4
10
8
6
4
2
0
2
4
6
8
10
Per Cent of Total Population

Figure 3

FORT NORMAN - 1982



FORT NORMAN - 1984

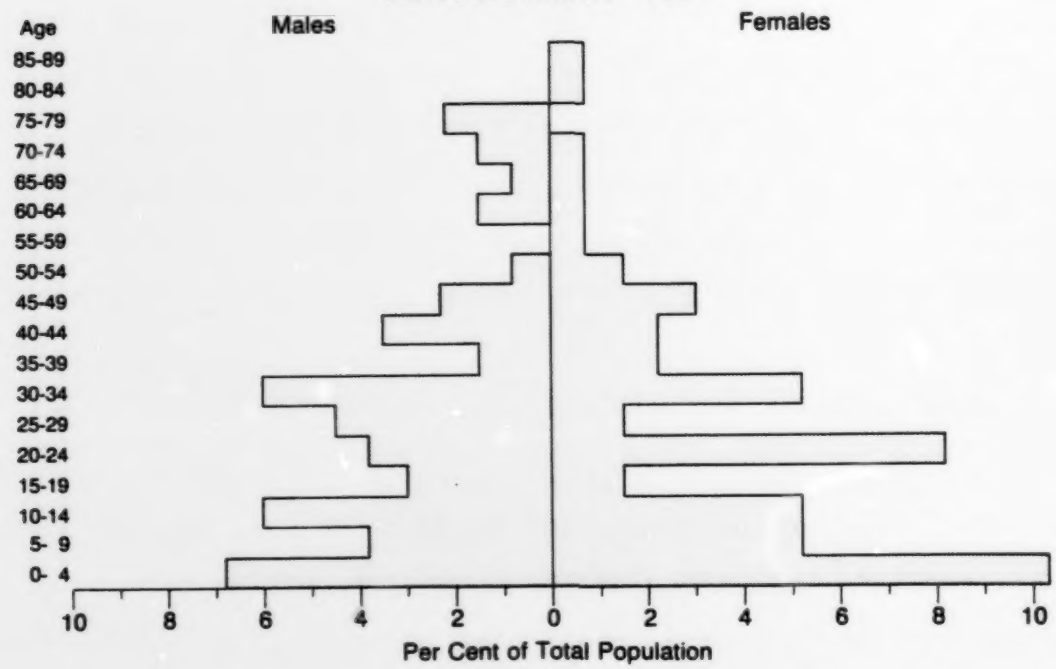


Figure 4

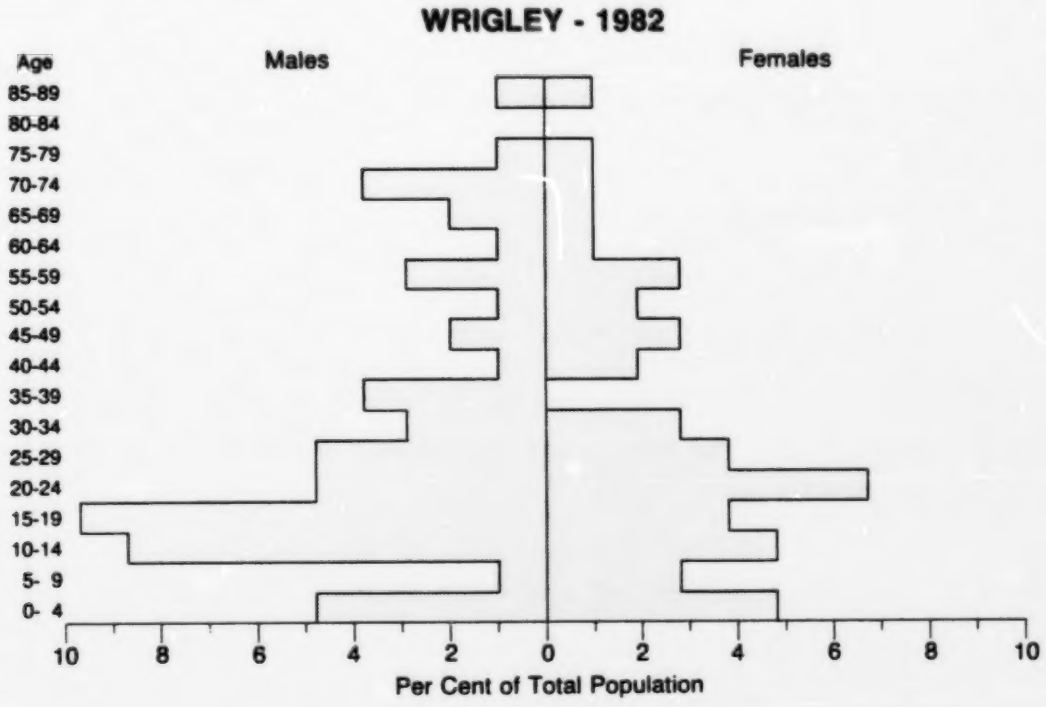
portion of this decline. As well, females in the 25 to 29 age cohort dropped from 4.5% of the population in 1982 to 1.5% in 1984. These pyramids suggest that an out-migration is taking place in Fort Norman with younger females being the major movers. The 20 to 24 age category for females seems more predominant in 1984 than in 1982. However, since the out-migration from some age categories was high, the remaining cohorts gain in relative strength. This is especially true when the communities are small as is Fort Norman.

Wrigley

The sparse population in Wrigley results in a rather odd shaped population pyramid (Figure 5). Clearly one of the significant features of this pyramid is the large proportion of males in the 10 to 19 bracket with no corresponding large numbers of females in this category. Although it is dangerous to speculate with such small numbers, it is postulated that the teenage females of Wrigley are moving elsewhere.

Fort Simpson

The shape of the population pyramid for Fort Simpson is much more regular than those of the other communities because of its larger and more stable population (Figure 5). The slight narrowing of the pyramid in the 20 to 24 age cohort for males


WRIGLEY - 1982
Age
Males
Females
85-89
80-84
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5- 9
0- 4
10
8
6
4
2
0
2
4
6
8
10
Per Cent of Total Population

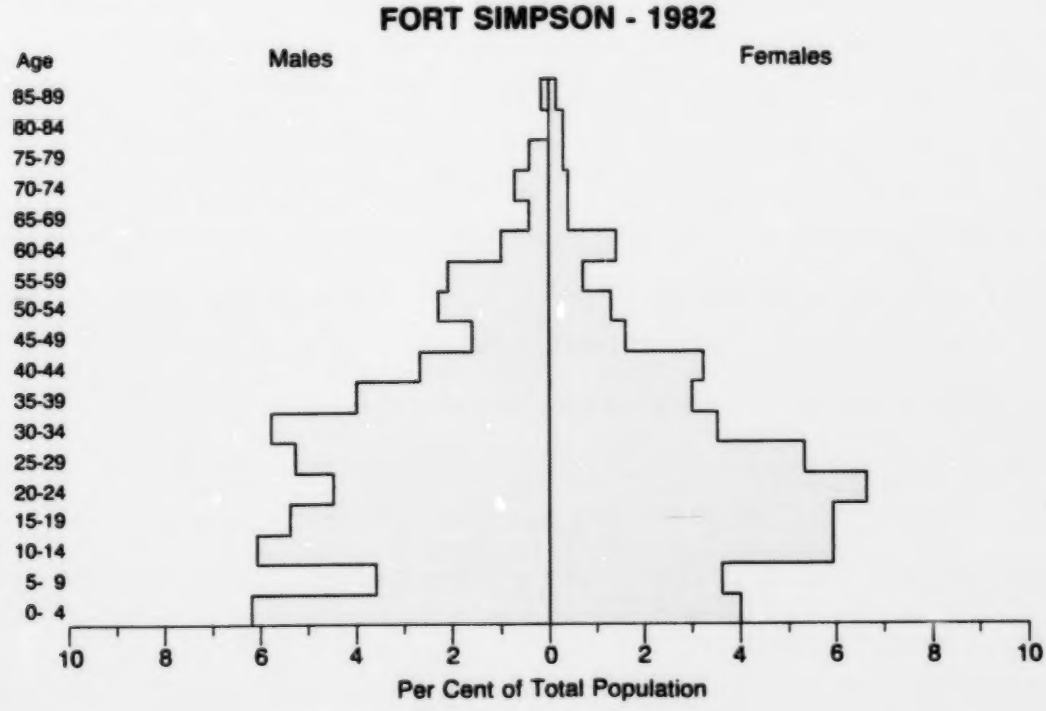

FORT SIMPSON - 1982
Age
Males
Females
85-89
80-84
75-79
70-74
65-69
60-64
55-59
50-54
45-49
40-44
35-39
30-34
25-29
20-24
15-19
10-14
5- 9
0- 4
10
8
6
4
2
0
2
4
6
8
10
Per Cent of Total Population

Figure 5

suggests a slight out-migration of males may exist.

3.3 Sex Composition

The sex composition of a community is another important ingredient in the analysis of the population. Generally, one would expect that the number of males and females in a community to be about even.

Table 3 Sex Composition of the Four Study Communities, 1982

	% Male	% Female
Norman Wells	51.8	48.2
Fort Norman	52.3	47.7
Wrigley	55.8	44.2
Fort Simpson	52.2	47.8

Differences would be due to either varying rates of male/female migration or varying death rates. In 1981, males comprised 52.4% of the population of the Northwest Territories. Table 3 reveals a similar pattern in the study communities in 1982.

The pattern of sex composition of the communities seems consistent until broken down on the basis of descent (Table 4). For the non-native portion of the population there are significantly more males than females in all communities. This supports the general view that southern males are more often

attracted to the north than females.

Table 4 Sex Composition of the Four Study Communities

		1982		1984	
		% Male	% Female	% Male	% Female
Norman Wells	Native	43.8	56.2	43.8	56.2
	Non-Native	52.9	47.1	56.0	44.0
Fort Norman	Native	53.1	46.9	53.9	46.1
	Non-Native	53.9	46.1	34.8	65.2
Wrigley	Native	55.8	44.2	-	-
	Non-Native (*)			-	-
Fort Simpson	Native	48.7	51.3	-	-
	Non-Native	58.3	41.7	-	-

Comment: * - Wrigley had only one non-native person at the time of the 1982 survey. For confidentiality this one person will not be included when calculations are made in this report by the descent of the individual.

However, for the native population the pattern is that there are more native females than males in Norman Wells and Fort Simpson and the opposite is true for Fort Norman and Wrigley. This suggests that the native females are migrating from the smaller northern centers to larger centers like Norman Wells and Fort Simpson. The probable explanation for this apparent pattern of migration is that the migrant young females are seeking wage employment and therefore are attracted to larger urban centers which offer better opportunities for employment than Fort Norman and Wrigley.

3.4 Education Levels

Education level was a new variable asked on the 1984 survey. Therefore, information is only available for Norman Wells and Fort Norman (Table 5). The gap in education levels between natives and non-natives is found in both communities with natives having attained much lower levels of education. This difference would be expected to affect the participation rates in the wage economy.

Table 5 Education Levels by Ethnicity

	Less Than High Schl	High Schl Diploma	Some Coll. or Tech.	Under Grad Univer.	Post Grad Univer.
Norman Wells Natives	52.6%	36.8%	5.3%	5.3%	-
Norman Wells Non-Natives	19.6%	40.2%	21.6%	16.2%	2.5%
Fort Norman Native	83.7%	9.3%	4.7%	2.3%	-
Fort Norman Non-Native	7.1%	21.4%	21.4%	42.9%	7.1%

Comment: The education level was recorded as the highest level of education which was attained. Full time students and those under the age of 16 were not included.

A comparison between the non-native populations in Norman Wells and Fort Norman reveals that the non-natives of Fort Norman have attained a higher level of education than those in Norman Wells. This difference may be attributed to the small number of non-native residents at Fort Norman, most of whom are employed as teachers, nurses, police and government employees; on the other hand at Norman Wells, there is a large number of non-natives, who

occupy a wider range of jobs ranging from unskilled to trades to professionals. These occupational differences are partly a reflection of the type of jobs generated by the Norman Wells construction work.

Another aspect of the education data is the differences between the education level by sex in the two communities (Table 6).

Table 6 Education Levels by Sex

	Less Than High Schl	High Schl Diploma	Some Coll. or Tech.	Under Grad Univer.	Post Grad Univer.
Norman Wells Males	20.7%	33.1%	28.1%	15.7%	2.5%
Norman Wells Females	24.3%	47.6%	10.7%	15.5%	1.9%
Fort Norman Males	70.0%	16.6%	6.7%	3.3%	3.3%
Fort Norman Females	65.6%	6.3%	9.3%	18.8%	-

Comment: The education level was recorded as the highest level of education which was attained. Full time students and those under the age of 16 were not included.

In Norman Wells, males are generally more likely to have attended technical school than the females. This is the result of the need for trade employees at the site of a major construction project. These positions tend to be male dominated. Otherwise there is little difference in educational levels between males and females in Norman Wells.

In Fort Norman, males are more likely to leave school after

receiving their high school diploma. Some females, on the other hand, tend to continue on to university. The explanation is that females traditionally occupy professional positions such as teachers and nurses.

4. MIGRATION, RESIDENCY AND TRANSIENTS

Prior to the Norman Wells Project, one of the major concerns of local residents was the expected influx of outsiders. This concern related to (1) the number of migrants, (2) the type of migrants (single or families) and (3) their effect on local services and facilities. In this section, the report assesses the magnitude and direction of migration for each community. This section also attempts to identify some of the characteristics of these recent migrants such as ethnicity, sex and type (i.e., a family vs. single).

4.1 Migration

The magnitude of population movement in the four centers is indicated in Figure 6 and 7. Here, the difference between projected and actual population size over a 25 year period reveal important trends: (1) Fort Simpson's and Norman Wells' populations exceed the projected figures, and (2) Fort Norman's and Wrigley's populations fell short of the projected figures.

In Figures 6 and 7 the dashed lines represent the predicted

Figure 6

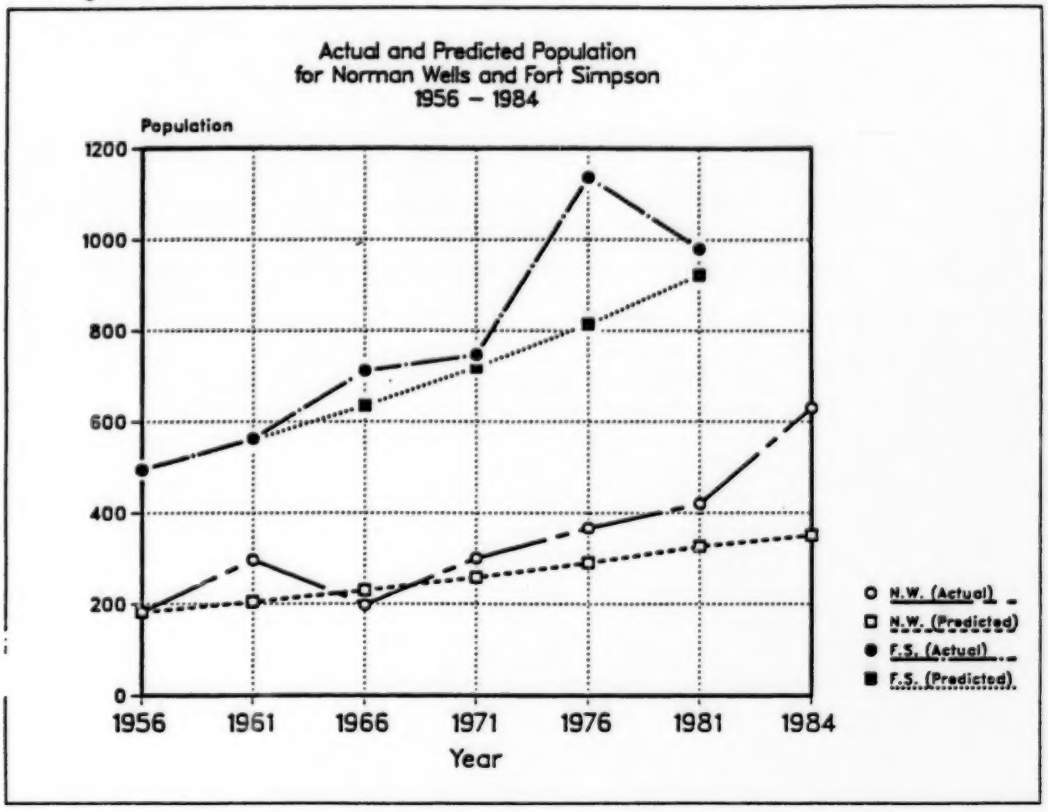
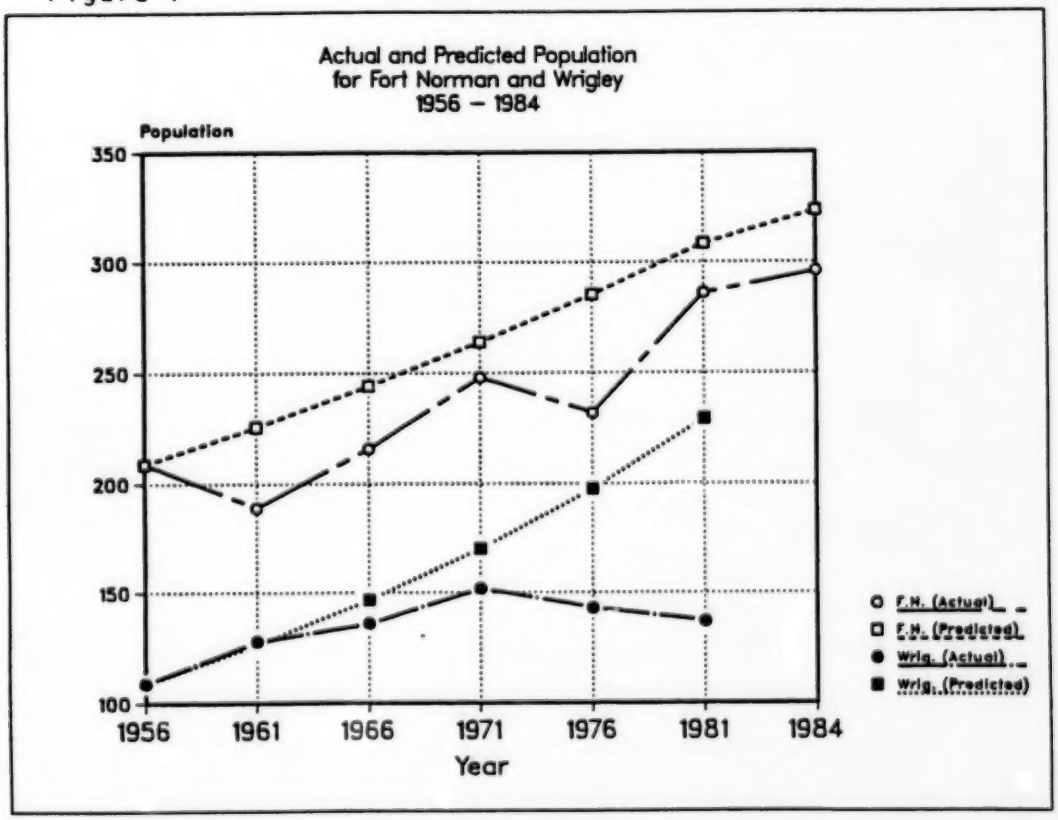


Figure 7



community populations without any migration. These predicted populations were obtained by using the 1956 population as the base population; calculating the size of the natural increase (births - deaths); and then adding this increase to the 1956 base population. This method determines predicted population size for each community while controlling for migration. The rates of natural increase are 2.5%, 1.6%, 3.2% and 2.7% for Norman Wells, Fort Norman, Wrigley and Fort Simpson, respectively (GNWT Bureau of Statistics). These community rates are well above the national figure of 0.8% (Canada Yearbook 1977-1981). Therefore these centers should have rapidly growing populations but as Figure 7 illustrates, such is not the case for Fort Norman and Wrigley.

Fort Simpson and Norman Wells have had overall in-migration. The recent acceleration of in-migration to Norman Wells is clearly illustrated (Figure 6). Fort Norman and Wrigley have experienced net out-migration in recent years as indicated in Figure 7. The rapidly increasing gap for Wrigley indicates the strong influence of out-migration on this community. The magnitude of these migration patterns must now be examined.

4.2 Residency

Recently migrated households are defined as those established in the community over the past five years. In 1982,

70% of households in Norman Wells were recent migrants, i.e., people who moved to Norman Wells between 1978 and 1982. By 1984, those who had moved to Norman Wells from 1980 to 1984 comprised over 82% of the population (Table 7). In Fort Simpson, recent migrants were also of some importance but in Fort Norman they were much less evident. No new households were established in Wrigley during the five years prior to 1982.

Figure 8

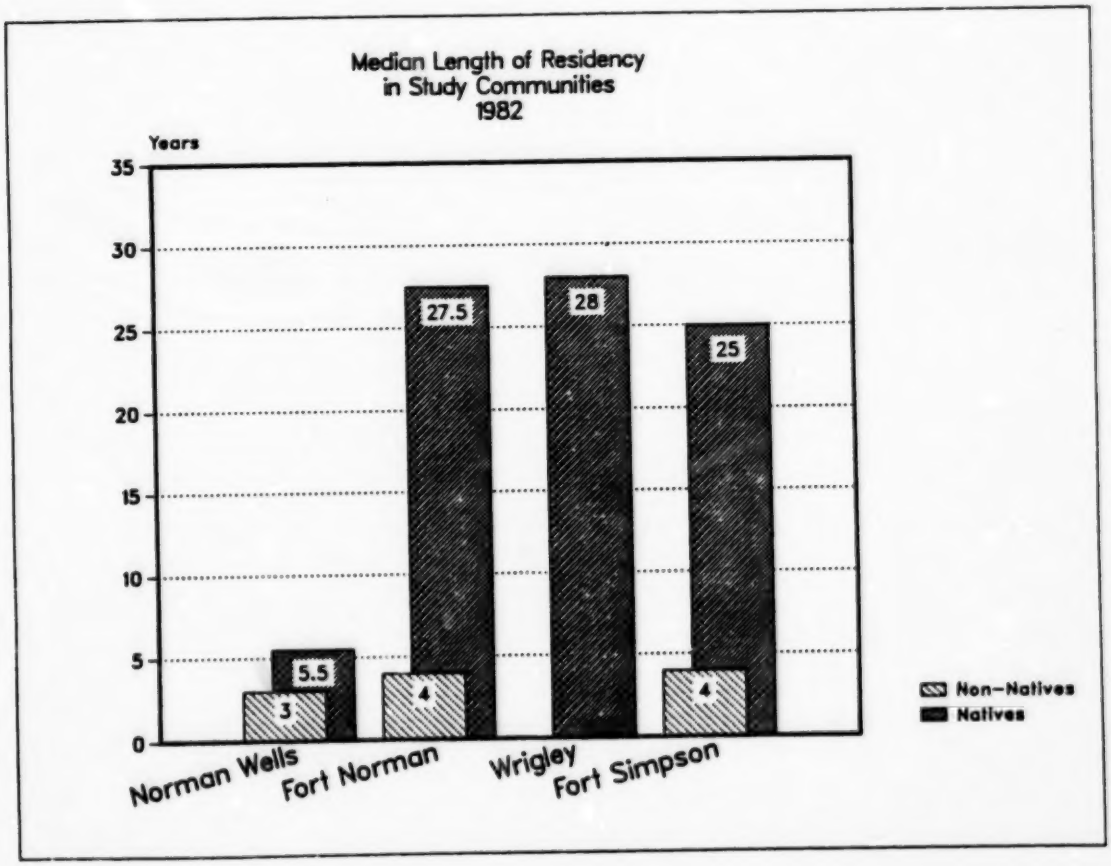


Figure 8 indicates that the native population has much longer lengths of residency in the communities than the

non-natives. This pattern is expected as most of the non-natives are migrants to the Mackenzie Valley while many of the natives were born and raised in this area. The use of median length of residency in Figure 8 indicates that 50% of that segment of the population has resided longer than the median figure and 50% have resided for a shorter duration than the median figure. For example, for all of the residents of the four study communities the median length of residency is nine years. So half of the population has lived in their community for more than nine years and and half for less than nine years.

In an analysis of the population by length of residency of households, the 1984 data demonstrates the impact of the Norman Wells Project upon the "permanency" of the community's population. Recent migrants, defined as those arriving less than five years prior to 1984, accounted for 82.1% of the households in Norman Wells in 1984. Since a household in this survey was defined as having had to exist for at least one year prior to the survey date, this data, by design, underestimates the proportion of the newcomers in the total population. For example, in 1984 there were 101 households recorded as recent migrants to Norman Wells and another 27 households who were there less than a year. By including these 27 households, then 128 out of the 150 households or 85.3% of the population would be recently migrated residents. This exceedingly high proportion of newcomers demonstrates the highly mobile nature of Norman Wells residents.

Table 7 Length of Residency in the Study Communities

Local Resident Years of Households (1982)

	Norman Wells	Fort Norman	Wrigley	Fort Simpson
Recently Migrated Households	53 (69.7%)	8 (16.7%)	0 (0%)	78 (40.4%)
1 Year	15	3		26
2 Years	16	1		23
3 Years	12	3		9
4 Years	5	0		10
5 Years	5	1		10
Permanent Households	23 (30.3%)	40 (83.3%)	21 (100%)	115 (59.6%)
6-10 Years	16	7	1	24
11-15 Years	2	0	0	13
16-20 Years	2	4	6	11
21-30 Years	3	10	4	30
31-40 Years		5	3	10
41-50 Years		3	0	11
51-60 Years		6	4	8
> 60 Years		5	3	8

Local Resident Years of Households (1984)

	Norman Wells	Fort Norman
Recently Migrated Households	101 (82.1%)	9 (29.0%)
1 Year	29	4
2 Years	34	1
3 Years	28	3
4 Years	7	0
5 Years	3	1
Permanent Households	22 (17.9%)	22 (71.0%)
6-10 Years	13	5
11-15 Years	5	0
16-20 Years	1	3
21-30 Years	2	7
31-40 Years	1	2
41-50 Years		1
51-60 Years		2
> 60 Years		2

Such a level of population turnover may place more community responsibility on the permanent residents.

In Fort Norman, the impact of the Norman Wells Project on the population is much less pronounced. Using the survey definition of a household, there have been nine new households in the period 1980 - 1984. However there are four new households in the less than one year category, resulting in 37.1% of the residents of Fort Norman being considered recent residents.

The ethnicity of these recent migrants can be seen in the following table:

Table 8 Descent of Recent Migrants

	Status Indian	Metis	Inuit	Non-Native
Norman Wells	1.0%	3.1%	1.0%	94.9%
Fort Norman	33.3%	11.1%	-	55.6%

Comment: Recent migrants have been defined as those establishing residence in the community in the past five years.

The most recent migrants to Norman Wells are almost entirely non-native. The Fort Norman migrants have also been predominantly non-native. Interestingly, 53.9% and 54.3% of the recent migrants to Norman Wells and Fort Norman, respectively, have been male.

To this point, this discussion has focused on the in-migrants to Norman Wells and Fort Norman. As noted earlier a net out-migration from Fort Norman and Wrigley has occurred and it is important to obtain an idea of the number of emigrants and their intended destinations. In 1982, in Fort Norman 5.1% of the households indicated that they had members who had left the community permanently in the past twelve months. These emigrants from Fort Norman all moved to the northern communities of Inuvik, Yellowknife or Norman Wells. This supports the earlier hypothesis of people leaving the smaller communities to live in larger communities. Wrigley in 1982 reported that no household had members who had left the community in the past twelve months.

In 1984 Fort Norman had 11.5% of its households with members who had left in the past twelve months. In this case Norman Wells and the south were the destinations of the emigrants.

4.3 Transients

One of the concerns raised by the FEARO report was the in-migration of non-native transients and their negative effect on native society. A transient is defined as a "non-permanent" household and it is usually associated with unskilled, single, short-term residents. The magnitude and impact of transients on a community is very difficult to assess. The definition of a transient makes it almost impossible to know whether new-comers

to a community are "transient" or are planning on making the community their permanent home. An indication of whether the concern over transients was realized during the construction phase of the Norman Wells Project would be (1) the number of new-comers to Norman Wells, and (2) the number of families, as opposed to single individuals, who had migrated to Norman Wells in the last five years. This assumes that families are more likely to stay in Norman Wells for a longer period of time than single people and that families are less likely to have a negative impact on native society than single individuals.

In 1984, there were 101 out of 123 households in the recently migrated category in Norman Wells. Approximately 54% of the recently migrated households were families and 46% single persons. In Fort Norman, in 1984, there were nine recently migrated households and 67% were families. Assuming that the concern was more with single migrants than with family ones, these figures indicate that the concerns over the number of transients were not completely realized and that since little in-migration took place in Fort Norman, the impact on native society was very minor or non-existent.

In conclusion, some general observations can be made:

1. The population of Norman Wells consists of an extremely high percentage of persons who have settled in this center within the past five years. The

opposite is true of the other three centers.

2. In 1984, most of the recent migrants to Norman Wells and Fort Norman were families, not single persons.

3. A net out-migration is taking place from Fort Norman and Wrigley with the most usual intended destination being the larger northern communities.

5. POTENTIAL LABOUR FORCE

Information on the main activities of the household members was provided by the heads of households. The focus in this report is on the "potential labour force" which is defined as all members of the community who are over the age of 15, who are not either a full-time student or retired. The present activity of those of working age provides an indication of the economic well-being of the community. Shifts in the activities of the potential labour force also indicate shifts in the economy of the community. In this analysis, the activities of the potential labour force include full-time employees, part-time employees, unemployed and housewives. They will be broken down in terms of ethnicity, sex and age.

The stated activities of the potential labour force had no stringent definitions in this survey. Rather, the head of each household identified the activities of each household member at the time of the survey. This approach is different from that of Statistics Canada which has very rigid guidelines to identify the activities of the labour force. For example, the Labour Force

Survey for the Northwest Territories released by the GNWT Bureau of Statistics in April of 1985 uses Statistics Canada guidelines by defining the unemployed as those individuals wanting a job who had looked for work in the previous four weeks. The result of this definition is a 4% unemployment figure for Wrigley in December of 1984 (GNWT Bureau of Statistics). This compares with an unemployment rate of 33.3% in Wrigley in June of 1982 by the self-identification definition used in the monitoring survey.

The breakdown of potential labour force activity by ethnicity is provided in the Table 9.

Table 9 Potential Labour Force Activity by Ethnicity

		Full-Time	Part-Time	Unemp.	Hsewife
Norman Wells	Native 1982	82.4%	-	-	17.6%
	Native 1984	40.9%	9.1%	9.1%	40.9%
	Non-Native 1982	86.7%	0.9%	-	12.4%
	Non-Native 1984	76.3%	5.7%	1.3%	16.7%
Fort Norman	Native 1982	35.7%	13.0%	29.7%	21.6%
	Native 1984	31.5%	19.2%	35.6%	13.7%
	Non-Native 1982	66.7%	11.1%	-	22.2%
	Non-Native 1984	80.0%	13.3%	-	6.7%
Wrigley	Native 1982	27.1%	16.7%	33.3%	22.9%
	Non-Native 1982	-	-	-	-
Fort Simpson	Native 1982	37.4%	15.9%	27.2%	19.5%
	Non-Native 1982	76.2%	5.5%	3.1%	15.2%

Comment: The potential labour force is those persons over the age of 15 who are not either a full time student or retired.

In Norman Wells, there was little difference between the native and non-native totals in 1982. Both groups were highly involved in the labour force with over 80% of the people having full-time employment. The drop in the percentage of natives with full-time employment in 1984 can be attributed to an increase in the number of native families residing in Norman Wells as opposed to single individuals living alone in 1982. Further support for this statement is the increase from 1982 to 1984 in the percentage who were housewives. It is important to remember that there is a relatively small number of natives who actually reside in Norman Wells so that small shifts in numbers can seem more drastic when converted to percentages. For both the natives and non-natives in Norman Wells, there was an increase in part-time employment and unemployment from 1982 to 1984.

In Fort Norman large differences between native and non-native residents are apparent. Among the natives unemployment is at staggering levels in this community (35.6% in 1984). For natives, from 1982 to 1984 there was a decrease in the percentage with full-time jobs (-4.2) coupled with increases in part-time employment (+6.2) and unemployment (+5.9).

This undesirable employment situation is quite the opposite for non-native residents of Fort Norman. The number with full-time employment increased from two-thirds of the potential labour force in 1982 to 80% in 1984. There was no unemployment

recorded among the non-native residents of Fort Norman in either 1982 or 1984.

In Wrigley, there was a similar situation in 1982 to that of the natives of Fort Norman. One-third of the potential labour force in this community were unemployed.

Fort Simpson is another community where there are significant differences between the native and non-native residents. There were 37.4% and 76.2%, of the potential labour force of natives and non-natives, respectively, with full-time employment. Another important difference was unemployment of 27.2% for natives and 3.1% for non-natives.

A second method of analyzing the activities of the potential labour force is by sex. The following table illustrates the breakdown on this basis:

Table 10 Potential Labour Force Activity by Sex

		Full-Time	Part-Time	Unemp.	Hsewife
Norman Wells	Males 1982	98.6%	1.4%	-	-
	Males 1984	95.6%	2.2%	2.2%	-
	Females 1982	71.0%	-	-	29.0%
	Females 1984	46.6%	10.3%	1.7%	41.4%
Fort Norman	Males 1982	46.3%	18.6%	35.1%	-
	Males 1984	46.8%	21.3%	31.9%	-
	Females 1982	26.6%	6.3%	20.3%	46.8%
	Females 1984	28.3%	17.4%	28.3%	26.0%
Wrigley	Males 1982	33.3%	29.6%	37.1%	-
	Females 1982	22.7%	-	27.3%	50.0%
Fort Simpson	Males 1982	64.5%	18.6%	16.8%	-
	Females 1982	39.8%	5.4%	18.9%	35.9%

In Norman Wells, over 95% of the males had full-time jobs in 1982 and 1984. Part-time employment and unemployment were not a factor for the male portion of the population. The proportion of females with full-time employment dropped significantly from 1982 to 1984. However, the number of females classified as housewives increased from 29.0% in 1982 to 41.4% in 1984. This finding supports the earlier hypothesis that by 1984 project workers had moved their families into the community. Employment changes reflect the increases in the number of adult females with increases in female part-time employees and female unemployment rates.

Fort Norman's results reveal similar conclusions to those obtained through the breakdown on the basis of ethnicity. The levels of unemployment were extremely high. In Fort Norman, a decline occurred in the proportion of housewives from 1982 to 1984 (-20.8). This decline, coupled with increases of 1.7, 11.1 and 8.0 percentage points to female full-time employment, part-time employment and unemployment, respectively, leads one to conclude that many women attempted to enter the active labour force in Fort Norman from 1982 to 1984. The large increases in female part-time employment and unemployment is an indication of their limited success.

The final analysis of the potential labour force is by the age of the community residents. These results show the relative

strength of the Norman Wells economy and the much weaker conditions of the economies of Fort Norman and Wrigley (Table 11). In 1982 and 1984 there was extremely high levels of full-time employment in all age categories in Norman Wells. The decline of those with full-time employment in the 25 to 39 age category between 1982 and 1984 is explained by the increase in the proportion of housewives in this age category. This is another indicator of the large number of families moving into Norman Wells from 1982 to 1984.

In Fort Norman and Wrigley, the overall high levels of unemployment are magnified in the 16 to 24 age category. In Fort Norman, unemployment in this age category was 42.1% in 1982 and increased to 54.2% by 1984. Wrigley had unemployment of 63.6% in the 16 to 24 age category in 1982.

The 40 to 64 age cohort at Fort Norman was the only one which had an increase in the percentage who had full-time employment between 1982 and 1984 (+13.7). The 40 to 64 age category also had an increase in the percentage with part-time jobs while the percentage unemployed and those who were housewives declined between 1982 and 1984. The two other age categories in Fort Norman both had declines in those with full-time employment and increases in unemployment and part-time employment in this time period.

Table 11 Activity of Potential Labour Force by Age Categories

Norman Wells

1982

	Full-Time	Part-Time	Unemployed	Housewife
16 - 24	85.8%	-	-	15.0%
25 - 39	81.3%	1.2%	-	17.5%
40 - 64	96.8%	-	-	3.2%

1984

	Full-Time	Part-Time	Unemployed	Housewife
16 - 24	84.9%	6.0%	-	9.1%
25 - 39	68.6%	4.0%	2.7%	24.7%
40 - 64	83.7%	6.1%	2.0%	8.2%

Fort Norman

1982

	Full-Time	Part-Time	Unemployed	Housewife
16 - 24	31.6%	18.4%	42.1%	7.9%
25 - 39	50.0%	8.7%	21.7%	19.6%
40 - 64	28.6%	11.9%	21.4%	38.1%

1984

	Full-Time	Part-Time	Unemployed	Housewife
16 - 24	20.8%	25.0%	54.2%	-
25 - 39	43.8%	15.6%	28.1%	12.5%
40 - 64	42.3%	19.2%	15.4%	23.1%

Wrigley

1982

	Full-Time	Part-Time	Unemployed	Housewife
16 - 24	27.3%	-	63.6%	9.1%
25 - 39	31.6%	26.3%	26.3%	15.8%
40 - 64	23.5%	17.7%	17.7%	41.1%

Fort Simpson

1982

	Full-Time	Part-Time	Unemployed	Housewife
16 - 24	38.2%	20.9%	27.3%	13.6%
25 - 39	61.5%	9.5%	15.3%	13.7%
40 - 64	52.9%	8.3%	13.2%	25.6%

In Fort Simpson, the 1982 unemployment rate (27%) and part-time employment (21%) were highest among those in the 16 to 24 age category. In the other two age categories in Fort Simpson the distribution of activities could be considered quite "normal".

In conclusion, this analysis of the potential labour force has provided an indication of the economic conditions in the study communities. Norman Wells is in very good economic shape with extremely high employment levels for all segments of the population. Fort Norman and Wrigley on the other hand are clearly troubled by a weak economic base and extremely high unemployment. The 1984 results indicate that in terms of increased employment levels, there has been relatively little economic benefit from the Norman Wells Project for much of the population of Fort Norman. In Fort Simpson in 1982 and Fort Norman in 1982 and 1984, there were significant differences in terms of employment between the native and non-native segments of the population.

6. CONCLUSIONS

The purpose of this report has been to identify the population characteristics of the study communities and assess the impacts of the construction phase of the Norman Wells Project on these characteristics. The following observations may be made in terms of the 1982 population characteristics for the

pre-construction period of the Norman Wells Project:

1. In 1982, Norman Wells was an expanding, predominantly non-native community. It had a strong economy and had very high employment levels. Much of its population had resided in Norman Wells for less than five years.

2. Fort Norman, a predominantly native community, has had slow population growth and some out-migration. There were extremely high levels of unemployment in all segments of the population.

3. Wrigley, almost an entirely native community, has had little population increase with much out-migration. Unemployment in this community is extremely high (35.5%).

4. Fort Simpson, the largest of the communities, experienced consistent growth in the past. In terms of length of residency and employment levels, there are strong differences between the native and non-native segments of the population.

The impacts of the construction of the Norman Wells Project on the populations of Norman Wells and Fort Norman to June 30, 1984 are:

1. There has been accelerated in-migration into Norman Wells with the population rising to 630. The annual growth rate during the construction phase was 16.67% and 85.3% of the population could be called recent migrants as defined in this report.

2. Fort Norman had a population of 296 in 1984. Due to the small increase in population, it is apparent that there is out-migration from this community. Indications are that young native women are leaving these small communities to go to the larger communities.

3. The recent migrants to Norman Wells have often been the families of project employees.

4. The Norman Wells Project has produced little benefit in terms of increased employment in Fort Norman. This is especially true of the youths and natives for whom

unemployment worsened between 1982 and 1984. The most successful in capturing the benefits were the residents of Fort Norman in the 40 to 64 age category.

5. It is clear that many women in Fort Norman attempted to enter the active labour force between 1982 and 1984. However, unemployment levels and part-time employment increased substantially for women from 1982 to 1984.

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